**WHAT IS CLAIMED IS:**

1. An unidirectional ring system used in an indoor backbone network, comprising:

a residential gateway (RG) for connection to an external large-capacity network;

a service gateway (SG) coupled to the RG for serving as a clock master to synchronize clock signals in the system, for managing traffic and buses in the indoor backbone network, and for monitoring the physical states of transmission lines in the indoor backbone network; and

a plurality of service platforms (SPs) for exchanging user data between a user and the indoor backbone network,

wherein the SG and the SPs form a unidirectional ring structure.

2. The unidirectional ring system of claim 1, further comprising a detachable service adapter (SA) in each of the SPs for selectively providing various services to the user.

3. The unidirectional ring system of claim 2, wherein each of the SPs is configured to connect the SA to the backbone network so that an event and a service do not influence the backbone network.

4. The unidirectional ring system of claim 1, wherein a Self-ID process is performed to assign node IDs to the SPs when a change in an SP causes a bus reset, the

Self-ID process including the steps of:

initiating the bus reset due to the SP change;

broadcasting a Self-ID packet from the SG to the SPs;

sequentially assigning node IDs to the SPs according to the Self-ID packet, while increasing an ID count in the Self-ID packet each time a node ID is assigned to an SP; and

performing an error-related operation if the Self-ID packet generated from the SG does not return to the SG until a time being the sum of delays in the respective SPs elapses.

5. The unidirectional ring system of claim 4, wherein the SG checks the number of the SPs according to the ID count of the Self-ID packet.

6. The unidirectional ring system of claim 1, wherein priority levels for transmission of asynchronous data are assigned to the SPs so that the SPs can transmit asynchronous data according to the priority levels.

7. The unidirectional ring system of claim 6, wherein a gap time required for processing in a logical ink control (LLC) unit in each of the SPs is set between IEEE 1394 frames transmitted by the backbone network.

8. The unidirectional ring system of claim 2, wherein an IRC (Isochronous Resource Change) process is performed to report a change in an SA to the SG without the SA change influencing an ongoing service when the SA change occurs, the IRC process

including the steps of:

transmitting an IRC packet requesting assignment of a bandwidth from an SP having the SA to an IRM (Isochronous Resource Master) of the SG;

comparing the requested bandwidth with a maximum available bandwidth in the SG;

notifying the SP that a service is unavailable to the SP by the SG if the requested bandwidth is equal to or greater than the maximum available bandwidth;

changing an IRM map and assigning the requested bandwidth to the SP by the SG if the requested bandwidth is smaller than the maximum available bandwidth;

broadcasting an IRC packet containing information about the new bandwidth from the SG to the SPs; and

updating IRM information in the SPs.

9. The unidirectional ring system of claim 8, wherein the IRC packet is a QWRq (Write Request for Data Quadlet) packet defined in an IEEE 1394 standard, with a reserved value in a tCode field set to indicate an IRC packet.

10. The unidirectional ring system of claim 1, wherein the system is an IEEE 1394-based indoor backbone network.

11. The unidirectional ring system of claim 1, the plurality of SPs serve as child node to the SG.